DECISION NOTICE
Clearwater Fish Barrier Modification/Removal Project

Montana Fish, Wildlife and Parks
Region 2
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Phone (406) 542-5500

DESCRIPTION OF PROPOSED PROJECT

Montana Fish, Wildlife and Parks (FWP) proposes to modify/remove a fish barrier and earthen dike constructed along the Clearwater River in 1964. The integrity of the fish barrier has diminished over time and the structure's original purpose is no longer justified. Although the Clearwater Fish Barrier was constructed to restrict upstream migration of some introduced fish species, its restriction of bull trout, westslope cutthroat trout and other native species is not desirable.

The preferred project alternative includes construction of a full height rock-step channel at the site, which will provide upstream passage for migratory salmonids and maintain the current reservoir pool and wetland elevation.

PUBLIC PROCESS AND COMMENT

An Environmental Assessment of the Clearwater fish barrier project was made available for public review and comment for 30 days from January 14, 2009 through 5:00 pm February 12, 2009. Legal notices were published once each in the *Missoulian* (Jan 14), *Helena Independent Record* (Jan 14), and *Seeley Swan Pathfinder* (Jan 15) newspapers. The EA was posted on the FWP website (Jan 14, "Recent Public Notices"). Copies of the EA or postcard notification of its availability were sent to adjacent landowners and interested parties.

A total of 4 comments (4 letters) were received; one from the public (adjacent landowner), one from the local watershed group, and two from federal agencies. Of the four comments received, three were supportive of the preferred alternative (3A), with some suggestions for improvements. One letter recommended that Alternative 3B be selected, with supporting rationale, concerns and suggestions.

A *Revised* Draft Environmental Assessment (EA) was prepared for the project in September 2009, and made available for public review and comment from September 11, 2009 through 5:00 p.m. on October 1, 2009. Legal notices and notification to the same adjacent landowners and interested parties were issued as occurred for the January 2009 Draft EA. Legal notices were published once each in the *Missoulian* (Sept 10), *Independent Record* (Helena, Sept 11), and *Seeley Swan Pathfinder* (Seeley Lake, Sept 17) newspapers. The EA was posted on the FWP website (beginning Sept 11, "Recent Public Notices"). The EA or postcard notification of its availability was mailed September 10 to adjacent landowners and interested parties, and

notification was emailed September 11 to other interested parties. The revision primarily involved minor changes and clarifications to the original preferred alternative (3A) to construct a full height rock-step channel at the site. The revised preferred alternative included a channel crest elevation that is 1.5-feet higher than previously proposed, in order to maintain the current reservoir pool elevation. In addition, FWP addressed liability for structures that may remain at the site.

No comments were received on the *Revised* Draft EA.

The following is a summary of the comments received on the original Draft EA:

Category 1 – Support:

- "We concur with the selection of alternative 3A as the preferred alternative. Alternative 3A will effectively reestablish natural movement patterns for bull trout and cutthroat trout and will minimize longer term maintenance costs for the Department. It also retains the existing wetland. Although the wetland associated with the current barrier is not natural, it does have significant ecological value and serves to offset the loss of wetland habitats and functions elsewhere in the basin."

Response: FWP recognizes this support for the project. FWP agrees with the supporting rationale as balancing these values was a primary consideration in the selection of the preferred alternative.

Category 2 – Support for replacing the existing structure with a full height rock step channel (Alternative 3A), but other actions or modifications needed:

- "I am happy to hear that your proposed solution is Alternative 3A. Of your proposed solutions, it is the one that is most consistent with our personal views…. However, we request that the crest (water level) be kept as it is currently rather than lowered by 1.5 feet. The water is already very shallow and dropping it by any amount would have a significant effect on the wildlife and the beauty of the area."

Response: FWP concurs with the desire for a design modification that maintains the current pool elevation. The height of the rock-step channel was raised by 1.5 ft in the revised draft EA.

- "We support the preferred alternative, but urge you to give additional consideration to the enhancements we describe (below)"
    a) "It would be helpful to summarize the existing (recent fisheries) studies in a paragraph or two as a brief supplement or supporting document to the EA"
    b) "Our shared concerns with the project lie with the potential to reopen this corridor to further or future invasions of the upper Clearwater drainage lakes by nonnative species…While the EA indicates a step-pool type channel with one foot drops

should preclude upstream movement of pike, we would urge you to consider providing additional documentation and perhaps alter the design to strengthen the confidence that the preferred alternative will preclude pike movement."

c) "In the EA, you did not discuss the status of brook trout and brown trout in the drainage."

d) "We also have concerns that lake trout may eventually end up in the drainage.… it might become desirable to have an effective method to once again seal off the upper drainage and protect the integrity of the remaining headwater bull trout lakes from such an invasion. If the rock step structure in the Clearwater was designed with a pair of drops (perhaps 30-36 inches each) in sequence, they could be negotiated by adult salmonids presently migrating upstream, but be rapidly and efficiently altered into a single 60-72 inch drop to provide a permanent manmade barrier. Such a contingency might be worth considering at this time in the Clearwater, as it may currently be cost-efficient to do so in the initial construction."

a) Response: FWP and a graduate student (Aubree Benson -University of Montana) have presented the findings from recent research projects associated with Emily-A Dam and the Clearwater Drainage through professional presentations, posters and a M.S. thesis (in preparation). The following summarizes some of the pertinent findings:

We used radio telemetry to explore the impacts of the small Emily-A and Rainy Dams on movement of migratory bull trout (Salvelinus confluentus) throughout the Clearwater River Drainage. We captured a total of 88 adfluvial bull trout or bull trout/brook trout (Salvelinus fontinalis) hybrids below the two small dams, primarily by angling. We implanted radio tags in 31 fish and released them above the dams, passing a total of 75 fish in 2007-2008. We monitored their movements and those of 27 other bull trout tagged in the surrounding lakes. The Emily-A is a complete upstream migration barrier, whereas Rainy is a partial barrier. Ninety-seven percent of the radio tagged fish we moved over the dams swam into one of three previously unknown spawning tributaries and presumably spawned. Although we passed a relatively large number of bull trout, redd counts were low, and we estimated only 13% detection probability at the dams. In the West Fork, approximately 40-47% of the spawning adults were fish we passed over the Emily-A Dam. Fish community composition upstream and downstream of Emily-A Dam is virtually the same. Our data suggests that the dams have large impacts on native salmonids population sustainability and that fish passage would provide a significant benefit to migratory populations

b) Response: Discouraging upstream movement by northern pike is a stated objective of the project. Since pike are already present in Lake Inez and the Clearwater River upstream of the dam, completely prohibiting upstream passage of pike is not pertinent. Our intent is to create upstream passage features at the dam that provide unobstructed passage for migratory salmonids, but <u>discourage</u> the consistent movement of pike from a high density population downstream (Seeley Lake) to low density populations (Lakes Inez and Alva).

Because it is widely accepted that pike cannot jump vertical obstructions, rock step structures were incorporated into the proposed bypass channel. A considerable literature search was conducted to confirm this premise, but no studies examining the jumping ability

(or lack thereof) were located. However, vertical obstructions have proven effective in limiting upstream movement by northern pike in a number of locations in western Montana and in other states (numerous personal communications). The caveat is that pike have a tremendous burst speeds and have demonstrated the ability to climb fish ladders and "cascade" situations where vertical leaps are not needed. Regardless of the arguments regarding the jumping ability of pike, balancing objectives will be challenging under a volitional fish passage scenario. FWP will balance somewhat conflicting objectives by maximizing the vertical drops within the bypass channel at a level that provides upstream passage for migratory salmonids.

c) Response: Brook trout and brown trout are found in the Clearwater drainage, both upstream and downstream of the dam. Brook trout occur primarily in tributary streams in upper, middle and lower portions of the drainage, but have also been documented in the main stem river. Prior to ~ 1998, brook trout had not been observed upstream of Rainy Dam. However, an apparent unauthorized introduction in Clearwater Lake has served as a source for brook trout expansion in the upper watershed over the past decade.

Brown trout occur primarily in main stem lakes, the main stem river and in the lower ends of major spawning tributaries – both upstream and downstream of the dam. Highest densities are found in the main stem river downstream of Seeley Lake, but adults and sub-adults have also been consistently detected in lower Morrell Creek, Seeley Lake an, Salmon Lake. Low densities of juvenile brown trout were detected in the main stem Clearwater River and lower West Fork Clearwater River during electrofishing surveys in 2006-2008.

d) Response: FWP shares the concern of additional unauthorized fish introductions and potential impacts to native fish populations. In particular, illegal lake trout introduction from the upper Swan drainage is a major threat to Clearwater drainage bull trout populations and sport fisheries.

In developing the design for the rock-step channel, the height and configuration of vertical drops will balance the jumping ability of target fish species, with site constraints and the desire to exclude non-target fish species. An emphasis will be placed on design flexibility that could incorporate future fish passage modifications.

<u>Category 3 – Support for replacing the existing structure with a low height rock step channel (Alternative 3B), with additional recommendations:</u>

- "We support a version that is more in alignment with Alternative 3B, with the following recommendations (below). We feel that this alternative is a good compromise between total restoration of the site (Alternative 4) and maintaining some semblance of the wetland complex for the aesthetics and other values desired by the local landowner."

    a. "Channel width at the rock structures should be similar to that of the natural bankfull width."
    b. "Excavate and remove the top of the berm/dike to a height that would be similar to a bank height of the highest grade control structure, which in effect would be

setting a floodplain elevation. The excavated material would be used to fill lower elevations and create a more uniform surface to dissipate flood energies. This would allow flood flows to "top over" this portion of the berm/dike and minimize concentration of flood flow energies over the drop structure, and thus would function more similar to a natural floodplain. Details of this include:

i. Construct an overflow channel (i.e. floodplain swale) that would transport this flood flow to enter downstream of the drop structures and the bridge (i.e. similar to a floodplain side channel).
ii. Armor the toe slope of the berm where flood flows would be allowed to top the structure.
iii. Construct a rock weir just upstream of the bridge to maintain channel alignment."

c. "We would like to assist in assuring that we have a well-planned and an aggressive revegetation strategy of appropriate species compositions and densities in the newly exposed floodplain and channel above the dam, the berm/dike/and drop structure (e.g. at least a 3-year vegetation, weed-control, and summer watering plan)."
d. "This modification of Alternative 3B (i.e. lowering the height of the dam and largely removing or redistributing the earth berm with an aggressive revegetation plan) will greatly assist in ensuring long-term site productivity and failure risk reduction to the proposed structures, as well as not encroach on the downstream bridge site with a rock structure."

Response: Alternative 3B with various modifications was given serious consideration during evaluation of project alternative. However, this alternative does not the meet the objective of maintaining existing pool elevation and wetlands, and is unacceptable to the landowner.

A full height rock-step structure with berm left intact will likely not be conducive to the addition of an overflow channel. The structure will not be designed to allow flood flows to over-top the berm.

Recommendations not exclusive or directly related to Alternative 3B, such as to match natural bankfull width of when designing rock-step structures, implementing an aggressive revegetation component, constructing a grade control to maintain channel alignment upstream of the bridge, etc. will be incorporated into the final design. FWP welcomes the assistance of those with revegetation expertise that could add to the quality of the project.

DECISION

Based on the analysis in the Environmental Assessment (EA) and the applicable laws, regulations and policies, I have determined that this action will not have a significant effect on the natural or human environment. Therefore, an Environmental Impact Statement will not be prepared.

It is my decision to implement the proposed action with the identified FWP responses and proceed with the modification of Clearwater Dam, including construction of a full height rock-step channel (as described in Alternative 3A), provided that a suitable agreement with the landowner that transfers ownership and liability of the structure and maintains FWP's ability to modify the structure to manage species passage can be reached. By notification of this Decision Notice, the draft EA is hereby made the final EA with the FWP responses in this Decision Notice. The final EA with Decision Notice may be viewed at or obtained from Montana Fish, Wildlife & Parks at the above address.

Please direct any further requests or questions to Mack Long, Region 2 Supervisor, or Patrick Saffel, Region 2 Fisheries Manager.

/s/ Mack Long *10/26/09*

Mack Long, Regional Supervisor Date